

**REMARKS / ARGUMENTS**

**I. General Remarks and Disposition of the Claims**

Please consider the application in view of the following remarks. Applicant thanks the Examiner for careful consideration of this application, including the references that Applicant has submitted in this case and, pursuant to MANUAL OF PATENT EXAMINING PROCEDURE §609.02, all references submitted in the patent applications to which this application claims priority under 35 U.S.C. §120.

At the time of the Office Action, claims 42-61 were pending in this application. Claims 42-61 were rejected in the Office Action. Therefore, Applicant respectfully requests reconsideration in light of the following remarks.

**II. Remarks Regarding Rejections under 35 U.S.C. § 103(a)**

To support an obviousness rejection, MPEP § 2143.03 requires that "all words of a claim to be considered" and MPEP §2141.02 requires consideration of the "[claimed] invention and prior art as a whole." Further, the Board of Patent Appeals and Interferences recently confirmed that a proper, post-KSR obviousness determination still requires the Examiner make a "searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art." (*In re Wada and Murphy*, Appeal 2008-3733, citing *In re Ochia*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) and *CFMT v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003)). In sum, it remains well-settled law that an obviousness rejection requires at least a suggestion of all of the claim elements.

**A. Claims 42-48, 55-59, and 61 over Nguyen in view of Lee and Still**

Claims 42-48, 55-59, and 61 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,209,643 to Nguyen *et al.* (hereinafter "Nguyen") in view of U.S. Patent No. 6,817,414 to Lee *et al.* (hereinafter "Lee") and U.S. Patent No. 7,166,560 to Still *et al.* (hereinafter "Still").

None of *Nguyen*, *Lee*, or *Still* disclose the following element in claim 42: "combining an acid-releasing degradable material with a solvent or a plasticizer to create a coating solution" that can be coated onto particulates "on-the-fly." And, with respect to claim 55, none of *Nguyen*, *Lee*, or *Still* disclose the following element:

"combining an acid-releasing degradable material with a plasticizer to create a coating solution, with the proviso that the plasticizer does not comprise a starch" that can be coated onto particulates "on-the-fly."

In the present case, a solid degradable material is made coatable onto particulates, such as proppant or gravel, through the use of a claimed solvent or plasticizer. The claimed methods provide the user with an ability to coat particulates with a degradable material at the well site. Applicant has discovered that it could create such a coatable material that would continue to act as an acid-producer down hole even though it had already been rendered coatable.

The Office Action at page 4 indicates that *Nguyen* teaches that the treatment chemical may be absorbed or coated on the proppant or even may be in solid particulate form the treatment chemical may be introduced into a treating fluid either in solid particulate form or in liquid form in a similar manner as a tackifying compound, *i.e.* in the form of a solution in a solvent. While *Nguyen* describes the fact that a solvent can be used with the tackifying agent in order to create a liquid solution of the tackifying agent, this disclosure is immaterial to the form (liquid or solid) of the treatment chemical. (*Nguyen* at col. 5, ll. 55-58). *Nguyen* does not describe the use of a solvent or plasticizer to create an on-the-fly, coatable treatment chemical, rather *Nguyen* teaches that a solvent can be used to affect the form of the tackifying agent itself. That is, *Nguyen* is concerned with the ability to insert certain materials into a formation but does not teach altering degradable materials so that they can be coated onto proppant or gravel and still act as an acid-producer down hole.

The Office Action at page 5 relies on *Lee* as teaching the replacement of conventional gravel pack sand with "polymerized alpha-hydroxycarboxylic acid coated proppants such as polyglycolic-acid-coated sand." Applicant notes that the pending claims are not directed to simply coated particulates, and teaches methods specifically different than *Lee*. In *Lee*, the disclosure teaches polymerizing a monomer of glycolic acid in presence of proppant by heating to an elevated temperature. (*Lee* at col. 3, l. 64 – col. 4, l. 11). That is, *Lee* performs condensation polymerization with the removal of water in the presence of the particulate; this is not a method amenable to on-the-fly use

at the well site. By contrast, the pending claims take an already prepared polymer and make it into a coatable substance by the addition of a solvent or plasticizer.

*Nguyen*, *Lee*, and *Still*, taken together, do not disclose “combining an acid-releasing degradable material with a solvent or a plasticizer to create a coating solution” and then coating that solution “on-the-fly” as required by independent claim 42, or “combining an acid-releasing degradable material with a plasticizer to create a coating solution” and then coating that solution “on-the-fly” as required by independent claim 55. Thus, *Nguyen*, *Lee*, and *Still* cannot form a *prima facie* case of obviousness with respect to claims 42 or 55. Accordingly, Applicant respectfully requests withdrawal of this rejection with respect to claims 42-48 and 55-60.

With respect to dependent claims 48, 54, and 61, the Examiner again alleges that the limitation is optional. (Office Action at p. 6). Applicant respectfully disagrees. While claim 42 could be infringed by a method that did not incorporate an orthoester, only a method that did include an orthoester could infringe claim 48. Thus, arguing that an orthoester is an optional component of claim 42 is immaterial to whether that element is a required component of claim 48 (or 54 or 61). Specifically, the limitation is not optional because those claims require the acid-releasing degradable material to comprise a poly(orthoester). As the Office Action notes, claim 42 does not require the presence of poly(orthoester). Applicant agrees that claim 42 does not require that element, but the dependent claim at issue does make that element required. That is, while the acid-releasing degradable material must comprise at least one of the materials listed in the *Markush* group of the claims from which they depend, the additional limitation introduced in claims 48, 54, and 61 requires that the acid-releasing degradable material comprise a specific material—namely a poly(orthoester)—even if other materials are present. Thus, Applicant again requests that the limitation be given the proper patentable weight during prosecution.

Therefore, Applicant submits that claims 42-48, 55-59, and 61 are not obviated by the combination of *Nguyen*, *Lee*, and *Still*. Accordingly, Applicant respectfully requests withdrawal of this rejection with respect to claims 42-48, 55-59, and 61.

**B. Claims 42-48, 55-59, and 61 over Nguyen, Lee, Still, and Murphey**

Claims 42-48, 55-59 and 61 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Nguyen* in view of *Lee* and *Still*, and further in view of U.S. Patent No. 4,829,100 to *Murphey, et al.* (hereinafter "*Murphey*").

As discussed above in Section II.A., the combination of *Nguyen*, *Lee*, and *Still* fails to establish that every limitation of independent claims 42 and 55 was known in the prior art. *Murphey* fails to render obvious the deficiencies of *Nguyen*, *Lee*, and *Still*. Rather, the Examiner merely relied on *Murphey* for its alleged teaching that a particulate "can be coated rapidly and continuously by admixing in a stream (on-the-fly) . . . instead of batch mixing which requires a period of time..." (Office Action at 7). Claims 43-48, 56-59 and 61 depend, either directly or indirectly, from claims 42 and 55 and therefore include all the limitations of those independent claims, respectively, including limitations directed to combining an acid-releasing degradable material with a solvent/plasticizer. Thus, claims 43-48, 56-59 and 61 are patentable over the combination of *Nguyen*, *Lee*, *Still*, and *Murphey*. (35 U.S.C. §112, paragraph 4). Accordingly, for at least these reasons, Applicant respectfully requests withdrawal of this rejection.

**C. Claims 42-48, 55-59, and 61 over Nguyen, Lee, Still, and McDougall**

Claims 42-48, 55-59, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Nguyen* in view of *Lee* and *Still*, and further in view of U.S. Patent No. 5,192,615 to *McDougall et al.* (hereinafter "*McDougall*").

As discussed above in Section II.A., the combination of *Nguyen*, *Lee*, and *Still* fails to establish that every limitation of independent claims 42 and 55 was known in the prior art. *McDougall* fails to render obvious the deficiencies of *Nguyen*, *Lee*, and *Still*. Rather, the Examiner merely relied on *McDougall* for its alleged teaching of adding a friction reducing agent such as polyacrylamide or alcohol to the fluid suspension of *Nguyen*. (Office Action at 7). Applicant notes that the Examiner appears to be indicating that simply combining any of the components of *McDougall* with a fluid used in a fracturing operation would meet the limitations of the claims. However, the claims are specific as to what components are combined and cannot therefore be taught by simple additives in a fluid, where they may or may not combine with any of the other components. Claims 43-48 and 56-60 depend, either directly or indirectly, from claims

42 and 55 and therefore include all the limitations of those independent claims, respectively. Thus, claims 42-48, 55-59, and 61 are patentable over the combination of *Nguyen, Lee, Still, and McDougall*. (35 U.S.C. §112, paragraph 4). Accordingly, for at least these reasons, Applicant respectfully requests withdrawal of this rejection.

**D. Claims 42-61 over *Nguyen, Lee, and further in view of Murphey, McDougall, or Mikos***

Claims 42-61 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Nguyen* in view of *Lee* and *Still*, or over *Nguyen* in view of *Lee* and *Still*, further in view of *Murphey* or over *Nguyen* in view of *Lee* and *Still*, further in view of *McDougall*, and further in view of Patent Application No. WO 9425079A1 to *Mikos et al.*, (related to 6,689,608) (hereinafter "Mikos").

As discussed above in Section II.A., the combination of *Nguyen, Lee, and Still* fails to establish that every limitation of independent claims 42 and 55 was known in the prior art. The argument with respect to independent claim 42 is equally applicable to independent claim 49. *Mikos* fails to render obvious the deficiencies of *Nguyen, Lee, and Still*. Rather, the Examiner merely relied on *Mikos* for its alleged teaching of certain degradable synthetic polymers and noted that "it is well known in the art that all these polymers hydrolyze with release of an acid." (Office Action at p. 8). Applicant notes that *Mikos* is directed towards medical devices, but as to the issue of what is "well known in the art," the art of medical devices is not the art at issue. (*Mikos* Abstract). Thus, it is not surprising that *Mikos* does not disclose at least "combining an acid-releasing degradable material with a solvent or a plasticizer to create a coating solution" as required by independent claims 42 or 49, or "combining an acid-releasing degradable material with a plasticizer to create a coating solution" as required by independent claim 55. *Mikos* does not seek to make a degradable material coatable, but rather seeks to use a solid degradable material as "scaffolding" for tissue growth. (*Mikos* at col. 4, l. 66 – col. 5, l. 3).

Claims 43-48, 50-54, and 56-61 depend, either directly or indirectly, from claims 42, 49, and 55 and therefore include all the limitations of those independent claims, respectively. Thus, claims 42-61 are patentable over the combination of *Nguyen, Lee,*

*Still*, and *Mikos*. (35 U.S.C. §112, paragraph 4). Accordingly, for at least these reasons, Applicant respectfully requests withdrawal of this reject.

**E. Claims 42-61 over *Nguyen, Lee, and Still* or over *Nguyen, Lee, Still, and Murphey* or over *Nguyen, Lee, Still, and McDougall* or over *Nguyen, Lee, Still, and Mikos* all as applied above and in further view of *Cooke* and *Schwartz***

Claims 42-61 over:

- *Nguyen, Lee, and Still*; or
- *Nguyen, Lee, Still, and Murphey*, or
- *Nguyen, Lee, Still, and McDougall*; or
- *Nguyen, Lee, Still, and Mikos*;
- all as applied above and in further view of U.S. Application No. 2003/0060374 to *Cooke* (hereinafter “*Cooke*”) and U.S. Application No. 2003/0125215 to *Schwartz* (hereinafter “*Schwartz*”)

As discussed above, the combination of *Nguyen, Lee, and Still* and the combination of those references with any of *Murphey, McDougall*, or *Mikos* fails to establish that every limitation of independent claims 42, 49, and 55 was known in the prior art. In addition, *Cooke* and *Schwartz* do not remedy the deficiencies of the above combinations. Rather, the Office Action merely relied on *Cooke* for its disclosure of reducing the viscosity of a degradable polymer with a plasticizing agent. (Nov. 4, 2010 Office Action at p. 13). As to *Schwartz*, the Office Action cites that reference for the proposition that poly-EO, poly-PG, and poly-EG can be used as friction reducers in fracturing fluids.

Claims 43-48, 50-54, and 56-61 depend, either directly or indirectly, from claims 42, 49, and 55 and therefore include all the limitations of those independent claims, respectively. Thus, claims 42-61 are patentable over the above-listed combinations. (35 U.S.C. §112, paragraph 4). Accordingly, for at least these reasons, Applicant respectfully requests withdrawal of this rejection

**III. No Waiver**

All of Applicant's arguments and amendments are without prejudice or disclaimer. Additionally, Applicant has merely discussed example distinctions from the

cited references. Other distinctions may exist, and Applicant reserves the right to discuss these additional distinctions in a later Response or on Appeal, if appropriate. By not responding to additional statements made by the Examiner, Applicant does not acquiesce to the Examiner's additional statements, such as, for example, any statements relating to what would be obvious to a person of ordinary skill in the art.

**SUMMARY**

In light of the above amendments and remarks, Applicant respectfully requests reconsideration and withdrawal of the outstanding rejections. Applicant further submits that the application is now in condition for allowance, and earnestly solicits timely notice of the same. Should the Examiner have any questions, comments or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the undersigned attorney by telephone, facsimile, or electronic mail.

Applicant believes that no fees are due in association with the filing of this response. Should the Commissioner deem that any fees are due, including any fees for extensions of time, Applicant respectfully requests that the Commissioner accept this as a Petition Therefore, and directs that any additional fees be charged to McDermott Will & Emery's Deposit Account No. 500417, Order Number 086108-0180.

Respectfully submitted,

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